

04/18/03

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Ms Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, Southwest  
12th Street Lobby, TW-A325  
Washington D.C. 20554

Confirmed

APR 2

Distribution

Re: Ex Parte Comments to Cellular Telecommunications & Internet Association Ex Parte  
Presentation of February 25, 2003.

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WT Document No. 01-309

APR 23 2003

Dear Ms. Dortch,

Distribution Center

These comments are made in response to the Cellular Telecommunications & Internet  
Association Ex Parte Presentation of February 25, 2003.

In the presentation made by Jennifer Manner it was stated that Hearing Aid compatibility (HAC)  
and interference are different issues. I disagree with this statement as hearing aids can not be  
HAC as long as the cellular telephone generates interference that overpowers the desired voice  
signal of the telephone when using T-coils.

The interference is, first, a result of pickup, demodulation, and amplification of the hearing aids  
amplifier and is present whether the hearing aid is using the microphone or telecoil. Because of  
this the wireless industry is placing the entire blame on the hearing aid industry and insisting upon  
RF Immunity in the hearing aid. The hearing aid industry has made great strides in eliminating  
this source of interference, claiming a 15 dB improvement in RF immunity. The second source of  
interference is the magnetic field generated by the pulsing (or varying) battery current of digital  
cellular telephones. I have not found that in any of the comments submitted by the wireless  
industry that this source of interference is acknowledged. Of course, in order for the telephone to  
be HAC the telecoil must be sensitive to magnetic fields. Until this source of interference to the  
T-coil (telecoil) is eliminated it will be impossible for digital cellular telephones to be HAC.

CTIA is correct in saying that requiring internal coupling will not solve the interference problem but  
since the hearing aid industry has made great improvement in RF immunity, it is time that the  
wireless industry did their share in solving this interference problem. Solving the magnetic  
interference to the T-coil is it's responsibility and can not be solved in the hearing aid.

There is a solution to the magnetic interference to the telecoil as I have shown both to Mr. Barnes  
of CTIA and FCC personnel. I made a demonstration of the technique to FCC personnel in April  
of 2002 which was reported in an EX Parte letter to the FCC which can be in the FCC's E-Filing.  
Note: due to a typing error when sending the comment to the FCC it is necessary to use the lower  
case c in company in order to read the comment.

If the wireless industry truly wants to participate in a solution, as stated by Ms. Manner, to the  
interference problem which prevents digital cellular telephones from being HAC, the industry  
should at least investigate the solution outlined in my several comments to the FCC regarding  
HAC. These comments can be found by going to the E-Filing pages of the FCC.

I am offering my services to the wireless industry at no charge as I want to be able to use a digital  
cellular telephone with out resorting to expensive and cumbersome attachments as suggested in  
the CTIA presentation. We, who are hard of hearing and wear hearing aids; would like to be able  
to use digital cellular telephones like we use wireline telephones with out expensive and  
cumbersome attachments, It is possible to do so with the solutions available i.e., RF immune  
hearing aids, and digital cellular telephones free of magnetic interference to the T-coil from the  
telephone's battery and associated wiring.

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Further comments on the CTIA presentation follow. It is stated that wireline phones use speakers that are designed to provide T-Coil compatibility with hearing aids equipped with a T-coil. There is no reason why such a speaker could not be used in wireless telephones. Analog cellular phones provide the necessary inductive coupling so there is no reason why digital cellular telephones could not use the same type of coupling!

The presentation's statement that interference refers to the noise generated in a hearing aid when the source of RF energy such as from wireless phones, computer monitors, and fluorescent lights, indicates a lack of understanding of the difference between RF interference and magnetic interference. Noise generated in the hearing aid by RF energy of wireless phones is, in fact, due to a lack of immunity to RF energy in the hearing aid, but the source of interference caused by computer monitors and fluorescent lights is magnetic interference and not due to RF energy. In general, magnetic interference due to other devices than digital cellular telephones can be eliminated by moving away from the source or turning off the source. Of course this can not be done when using a cellular telephone as the phone must be close to the hearing aid.

It should be said that the RF energy generated by the telephone can not be decreased without having an adverse affect on the ability of the phone to communicate with the cell towers.

It is not understood what is meant by the statement that "the HAC standard is designed for wireline telephone and that use of this standard for wireless phones will not result in the desired outcome". The audio magnetic field necessary for inductive coupling of a wireline telephone is the same for wireless phones as it is for wireline telephone.

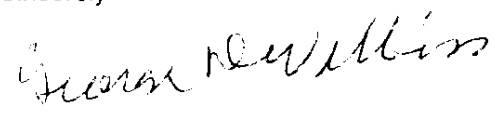
CTIA states HAC can provide coupling only to 20% of hearing aids that have T-coils but this is probably more than was present when Congress passed the HAC Act of 1988. so this is not a valid reason for not revoking wireless telephone's exemption to the HAC Act. The number of wireless telephones was very small at that time and the exemption of wireless telephones from the HAC Act was justified but now the number of digital cellular telephones is huge and many wireline subscribers are giving up wireline telephones and using only cellular telephones. Hard of hearing persons are not given this option because of the interference and thus is discriminatory.

The statement that HAC cannot fix the problem of interference is true but as stated above digital Cellular Telephones cannot be HAC until the magnetic field interfering with the T-coils (telecoils) is eliminated. The term HAC requires that the phone be useable with telecoil coupling which cannot be done until this magnetic source of interference is removed. Once the magnetic field generated by the telephone's battery and associated wiring is eliminated, and hearing aids are made RF immune cellular telephones will be HAC. Using the solution submitted in my comments and bypassing the current "hodge podge" circuit traces in the telephones by use of a small coaxial cable could result in successful retrofitting into phones already on the market at a reasonably small cost. Regardless, this is not a valid reason for not making changes so that future phones are HAC. The cost to make the modifications necessary is small compared to the cost of producing a digital cellular telephone. Many changes are currently being made to phones which far exceed the cost of making them HAC such as text, television displays, and television cameras.

A thorough engineering analysis of Starkey Laboratories report of a test of a directional antenna indicates that use of such an antenna in digital cellular telephones would allow use of presently manufactured hearing aids without RF interference. The use of directional antennas will not decrease the ability of a cellular telephone to communicate with a cell tower but the tests of Starkey Laboratories indicates they actually enhance this ability.

For all the reasons stated above it is requested that the exemption of wireless telephones to the HAC Act of 1988 be revoked and the wireless industry be required to make digital cellular telephones truly HAC for all phones manufactured after a reasonable time to allow the installations of the solutions since simple and inexpensive solutions do exist and could be installed in a very short time.

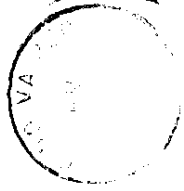
Sincerely

A handwritten signature in cursive script that reads "George DeVilbiss".

George DeVilbiss  
3056 Hazelton St.  
Falls Church, VA 22044  
Phone 703 534 1681  
Fax 702 534 5568  
geodv@erols.com  
or geodv1@covad.net



G. DeVilbiss  
3056 Hazelton St  
Falls Church, VA 22044



Mrs Marlene H. Norbath  
Sec. Internal Communications Commission  
445 12th Street S.W.  
12th St Lobby TWA 325  
Washington D.C. 20554

